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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary

Application No.

10/590,220

Applicant(s)

SONG ET AL.

Examiner

TOM Y. CHANG

Art Unit

2456

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-10 and 12-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-10 and 12-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/06)
Paper No(s)/Mail Date 07/20/2009, 09/02/2009, 12/22/2009.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application.
- 6) ☐ Other: _____.

DETAILED ACTION

Claims 1-4,6-10 and 12-26 are currently pending.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6-10, 12-15, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coutts US 6,311,165 and Russell US 2005/0021839.

Regarding claims 1, and 10 Coutts teaches a network terminal comprising, a power supply to supply for supplying a power to an element of the network terminal **["When power is applied to ATM 102, the central processor 138 is initialized," (Column 15 Lines 14- 15)]**, a nonvolatile storage medium to store a basic input/output system (BIOS) that automatically operates upon the supplying the power **["The processor 374 also has associated volatile memory 380 in the form of DRAM and nonvolatile memory 382 in the form of FLASH EPROM."(Paragraph 13)]** a controller to be initialized by operation of the BIOS to enable a connection between the network terminal and a host computer **(Figure 16 Peripheral 364)** and downloading a

terminal operating system (OS) from the host computer to the network terminal **["Using this information the peripheral 364 can access the server 334 and download an operating system using a simple protocol such as TFTP (Trivial File Transfer Protocol)."** (Column 22 Lines 24-27)], a volatile storage medium to store the terminal OS downloaded from the host computer **["The processor 374 also has associated volatile memory 380 in the form of DRAM and nonvolatile memory 382 in the form of FLASH EPROM."**(Paragraph 13)] the controller being re-initialized by the terminal OS to control the overall operation of the network terminal (**as each software component is downloaded it is reset and the controller not provides the functionality of the software it downloaded Col 11 Lines 22-32)** , and a communication part to communicate with the host computer, wherein the terminal OS is configured transmit user inputs at the network terminal to the host computer for execution by an application program on the host computer to provide execution results ; and receive a bitmap image from the host computer for display.

["With each peripheral module having a direct connection through communication link 17 to server 16, it can communicate directly and independently with the server 16 not only to download software but also to obtain data specific to a current transaction while it takes place. For example a request may be made for information specific to the user and appropriate to conduct the current transaction. Thus dispenser 15 may require the users current balance in order to determine if the user had sufficient funds to cover a requested cash withdrawal. User interface 12 may also require account balance and bank statement information in order to present these to the user." (Column 11 Lines 10-21)]

Coutts also teaches checking the network terminal [**"Therefore, the card reader control application performs a test of the card reader to ensure that the card reader is functioning correctly." (Column15 Lines 55-57)]**].

While Coutts teaches a system where a thin client sends user command and data to a server(host) that processes the command and returns the result to the thin client for display. Coutts is silent about a specific type of result return from the server that contains image data in bitmap form. Coutts also is silent as to whether the controller can be implemented by a programmable logic chip instead of a processor. Russell also teaches using a thin client computer system to push the processing workload to a remote server. Russell teaches that the execution results are converted into the bitmap image at the host computer and sent to the thin client (**¶21**). It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Coutts with Russell. The reason for this modification would be to apply the well known method of sending images as results to a thin client as taught by Russell. A person of ordinary skill would be motivated to combine Coutts and Russell because this decreases the processing power needed at the network terminal. Russell also teaches that the controller of the network terminal being a programmable logic chip (**Russell calls it a programmable logic controller ¶5**). It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the network terminal and controller of Coutts with a programmable logic chip instead of a standard processor method. The reason for this modification would be because programmable logic arrays(chips), PLAs are well known in the art (**as taught by Russell ¶25**) and provide

hardware that is easily reconfigurable to the specific functionality needed by the terminal.

Regarding claim 2 the combination of Coutts and Russell have been discussed in reference to claim 1 above, Coutts teaches an encoder for encoding the received data(**Figure 21 TV Encoder**); and at least one input/output port (**Figure 15 Router 368**)to which at least one user interface is connected(**Figure 15 User Interface 364d**).

Regarding claim 3 the combination of Coutts and Russell have been discussed in reference to claim 1 above, Coutts teaches that the nonvolatile storage medium is a ROM or a flash memory[**"The processor 374 also has associated volatile memory 380 in the form of DRAM and nonvolatile memory 382 in the form of FLASH EPROM."**(Paragraph 13)] Regarding the size of the flash memory Coutts teaches less than or equal to 512 KB of memory [**"The Java CPU would run the Java OS (operating system), which presently requires about 512 KB ROM/128 KB RAM for memory"** (Column 28 Lines 54-56)]

Regarding claims 4 and 12 the combination of Coutts and Russell have been discussed in reference to claim 1 and 10 above, Coutts teaches that the controller is implemented with a programmable SoC (system on a chip) instead of a CPU (central processing unit).

[**"The Ethernet adapter 366 implements the TCP/IP protocol, and is in electronic communication with an embedded processor 374. Processor 374 executes JAVA.RTM. code, and communicates with peripheral-specific control electronics 376 which controls the hardware 378 in the peripheral 364."** Column 21 Lines 54-59)]

Regarding claim 6 the combination of Coutts and Russell have been discussed in reference to claim 1 above, Coutts teaches that the volatile storage medium is used as a working memory and is implemented with less than or equal to 8-MB RAM. [**“The Java CPU would run the Java OS (operating system), which presently requires about 512 KB ROM/128 KB RAM for memory” (Column 28 Lines 54-56)**]

Regarding claims 7 and 15 the combination of Coutts and Russell have been discussed in reference to claim 1 and 10 above, Coutts teaches that the network terminal and the host computer is assigned a unique IP address to identify each other to establish communication between the host computer and the network terminal. [**“When the peripheral 364 has received its IP address and its operating system, it can then use the TCP/IP protocol to download its applications software module from the server 334 to the volatile memory 380.” (Column 12 Lines 34-37)**]. It is inherent that the host computer is also assigned an IP address otherwise the terminal and host would not be able to communicate.

Regarding claim 8 the combination of Coutts and Russell have been discussed in reference to claim 1 above, Coutts teaches that the nonvolatile storage medium stores a program enabling the network terminal to have a unique IP address. [**“When a peripheral 364 is first powered-up, its processor 374 uses FLASH EPROM 382 to boot-up and broadcast a message requesting an IP address.” (Column 22 Lines 9-11)**]

Regarding claim 9 the combination of Coutts and Russell have been discussed in reference to claim 1 above, Coutts teaches that the at least one user interface includes

a monitor, a keyboard, a mouse, a speaker, a microphone, a touch screen, a remote control, or other interfaces using a USB port, a serial port or a memory slot.

["ATM 21 has a number of peripheral devices. These are a card reader 23, a receipt printer 24, and a cash dispenser 25. These devices are connected through suitable parallel or serial ports to a central processor 30 provided in ATM 21. ATM 21 also includes a keyboard 22 and a user display 31." (Column 11 Lines 57-62)]

Regarding claim 13 the combination of Coutts and Russell have been discussed in reference to claim 10 above, Coutts teaches running the host computer and connecting the host computer to the network prior to supplying the power.

["When a peripheral (e.g. 216) is first powered-up, it uses non-volatile memory to boot-up and then transmits a message to the server 34. On receiving this message, the server uploads software to the peripheral to enable the peripheral to initialize and begin the team-building process." Column 19 Lines 20-24)]

It is clear that the host needs to be operational before the terminal is powered up in order for this to happen.

Regarding claim 14 the combination of Coutts and Russell have been discussed in reference to claim 10 above, Coutts teaches that the host computer is provided with the terminal OS for an operation of the terminal network as well as an OS for operation of the host computer. **["Using this information the peripheral 364 can access the server 334 and download an operating system using a simple protocol such as TFTP (Trivial File Transfer Protocol)." (Column 22 Lines 24-27)].** Coutts teaches that the server contains the terminal OS to be downloaded to the terminal. It is clear that the server also has its own operating system in order to perform this download.

Regarding claim 19 the combination of Coutts and Russell have been discussed in reference to claim 1 above, Coutts teaches an I/O port connectable to a monitor

["ATM 21 has a number of peripheral devices. These are a card reader 23, a receipt printer 24, and a cash dispenser 25. These devices are connected through suitable parallel or serial ports to a central processor 30 provided in ATM 21. ATM 21 also includes a keyboard 22 and a user display 31." (Column 11 Lines 57-62)]

and wherein the execution results include an image and the terminal OS provides the image to the I/O port.

["If the entered PIN number is found to be valid for the particular card that has been inserted into card reader 13 then user interface 12 can be informed accordingly whereupon it may generate a USER_VALID" event message. This may cause display of a cash selection request." (Column 11 Lines 15-19)]

Regarding claim 20 the combination of Coutts and Russell have been discussed in reference to claim 1 above, Coutts teaches that all applications programs are provided on the host computer and all user inputs for an application program are transmitted to the host computer for execution on the host computer.

["In accordance with this invention, an Ultra Thin Client approach applies Thin Client concepts to the individual components and peripheral modules of a transaction terminal, such as an ATM, SST or POS terminal, with individual peripheral modules loading and running their own applications (e.g., Java applications) from the network." Column 28 Lines 2 -7)]

Claims 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coutts and Russell as applied to claim 10 above, and further in view of Vasilik US 5,515,081.

Regarding claims 16 and 17, Coutts teaches transmitting a screen background of the host computer in the form of an image(**Figure 54**) to the network terminal and displaying the transmitted screen background on a monitor connectable to the network terminal

["In the event of insertion of a card by a new user into card reader 13 a message "CARD_INSERTED" may be broadcast by card reader 13. The effect of that message may be to cause user interface 12 to display the text "Please enter PIN". When the user has entered a PIN number a 'Validate User PIN' operation can take place. This might involve the use of links 17 and 19 to communicate with legacy host 18. If the entered PIN number is found to be valid for the particular card that has been inserted into card reader 13 then user interface 12 can be informed accordingly whereupon it may generate a "USER_VALID" event message. This may cause display of a cash selection request." (Column 13 Lines 8-19)]

Coutts does not teach the use of a bitmap image. Vasilik teaches the use of bitmap images and that the bitmap images can be in 8 bit or 16 bit format[**"For representing color images, a bitmap requires more than one bit for each pixel. A 16-color bitmap image, such as are commonly employed for VGA displays, would require 4 bits to encode the color of each pixel. A bitmap for a 256-color image requires 8 bits per pixel."** Column 5 Lines 52 – 56)]. It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the images used in displaying executed results with bitmap images as taught by Vasilik. The reason for this modification would be to allow the display of images that need a bitmap of 8 or 16 bits to show color.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coutts, Russell, and Vasilik as applied to claim 16 above, and further in view of Suman et al 5,717,387 hereafter Suman.

Regarding claim 18, the teachings of Coutts/Russell/Vasilik have been discussed in reference to claim 16 above. The combination of Coutts/Russell/Vasilik does not teach that the display area a colors of the monitor are adjustable. Suman teaches that a display area and colors of the monitor are adjustable upon a user's demand.

["If the vehicle employs a reconfigurable instrument panel display, the present invention allows for the vehicle operator to reconfigure the display gauges on the instrument panel display by changing their location, size, color, or existence as displayed on the instrument panel." (Column 10 Lines 36-40)]

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the teachings of Coutts/Russell/Vasilik with those of Suman. The reason for this modification would be to provide the user a display that is configurable to their desired preference as taught by Suman.

["To allow various vehicle operators to select their desired preference, microcontroller 35 determines in step 277 whether a flag has been set for a non-default gauge configuration and sets the gauge configuration to that last used by the driver with the new ID in step 279 if the flag has been set. " (Column 10 Lines 40-45)]

Claim 21-24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coutts and Russell as applied to claim 1 above, and further in view of Buswell et al US 5,918,039 hereafter Buswell.

Regarding claim 21 Coutts and Russell teaches all the limitations as described in claim 1 above., that the terminal OS being to communicate user input to the host computer where the application programs are provided.

[“When the user has entered a PIN number a ‘Validate User PIN’ operation can take place. This might involve the use of links 17 and 19 to communicate with legacy host 18. If the entered PIN number is found to be valid for the particular card that has been inserted into card reader 13 then user interface 12 can be informed accordingly whereupon it may generate a “USER_VALID” event message. This may cause display of a cash selection request.” (Column 13 Lines 12-19)]

Coutts does not teach that the volatile and non-volatile memory of the network terminal excludes any application programs. Buswell teaches that the volatile and non-volatile memory of the network terminal excludes any application programs

[“A video display terminal capable of operating with a graphical user interface such as Windows.RTM. provides windowing functionality to permit use of popular applications programs resident on a server, without requiring more than application data to be transmitted from the server, and keyboard and mouse information to be transmitted from the terminal to the server.” (Abstract)]

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the teachings of Coutts with the teachings of Buswell and provide a thin client that only transmits and displays data. The reason for this modification would be to provide dynamic reconfiguration and more dispersion of processing power as taught by Coutts.

[“The Ultra Thin Client concept is offered as an extension of Thin Client, whereby individual peripheral modules of an ATM or POS terminal can be implemented as Thin Clients, giving dynamic reconfiguration and more efficient dispersion of processing power.” (Column 25 Lines 61-65)]

Regarding claims 22, and 24 Coutts teaches a method and system that has a host computer including a plurality of application programs [**“initiate a network session with server 16 and download the current version of the applications software to each module.” Column 9 Lines 44,45**]], and an operating system to run the application programs [**“Printer 14 can be programmed to load Web pages directly over communication link 17 from server 16 as well as loading the appropriate printer driver software to support the graphics, fonts and other imagery in the downloaded Web pages.” (Column 10 Lines 52-56)**]]. It is clear that there has to be an OS on the server to allow such programs to load the web page. Coutts teaches a terminal operating system (OS) [**“Using this information the peripheral 364 can access the server 334 and download an operating system using a simple protocol such as TFTP (Trivial File Transfer Protocol).” (Column 22 Lines 24-27)**]], a plurality of network terminals, each network terminal requiring the terminal OS to operate [**“A banking, retail or other transaction network may accordingly comprise a plurality of transaction terminals each including a plurality of peripheral devices” (Column 4 Lines 29-31)**]] and a network to connect the plurality of network terminals to the host computer (**Figure 2 WAN/LAN/DIALUP 17**), wherein each network terminal comprises: a power supply to supply power to an element of the network terminal[**“When power is applied to ATM 102, the central processor 138 is initialized,” (Column 15 Lines 14- 15)**]], a nonvolatile storage medium to store a basic input/output system (BIOS) that automatically operates upon supplying the power[**“The processor 374 also has associated volatile memory 380**

in the form of DRAM and nonvolatile memory 382 in the form of FLASH EPROM.”(Paragraph 13)]; a controller to be initialized by operation of the BIOS to enable a connection between the network terminal and the host computer(**Figure 16 Peripheral 364**) and downloading the terminal OS from the host computer to the network terminal[**“Using this information the peripheral 364 can access the server 334 and download an operating system using a simple protocol such as TFTP (Trivial File Transfer Protocol).” (Column 22 Lines 24-27)**], a volatile storage medium to store the terminal OS downloaded from the host computer[**“The processor 374 also has associated volatile memory 380 in the form of DRAM and nonvolatile memory 382 in the form of FLASH EPROM.”(Paragraph 13)**]; and a communication part to communicate with the host computer, wherein the terminal OS is to transmit user inputs at the network terminal to the host computer for execution by the application programs, the applications programs being stored at the host computer; and receive images including execution results to a monitor for display, the monitor being connectable to the network terminal(**Figure 26 Touch Screen**), .

[**“With each peripheral module having a direct connection through communication link 17 to server 16, it can communicate directly and independently with the server 16 not only to download software but also to obtain data specific to a current transaction while it takes place. For example a request may be made for information specific to the user and appropriate to conduct the current transaction. Thus dispenser 15 may require the users current balance in order to determine if the user had sufficient funds to cover a requested cash withdrawal. User interface 12 may also require account balance and bank statement information in order to present these to the user.” (Column 11 Lines 10-21)**]

Coutts does not teach that the applications are executed only at the server. Buswell teaches that the applications are only run at the server .

["A video display terminal capable of operating with a graphical user interface such as Windows.RTM. provides windowing functionality to permit use of popular applications programs resident on a server, without requiring more than application data to be transmitted from the server, and keyboard and mouse information to be transmitted from the terminal to the server. "(Abstract)]

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the teachings of Coutts with the teachings of Buswell and provide a thin client that only transmits and displays data. The reason for this modification would be to provide dynamic reconfiguration and more dispersion of processing power as taught by Coutts.

["The Ultra Thin Client concept is offered as an extension of Thin Client, whereby individual peripheral modules of an ATM or POS terminal can be implemented as Thin Clients, giving dynamic reconfiguration and more efficient dispersion of processing power." (Column 25 Lines 61-65)]

While Coutts teaches a system where a thin client sends user command and data to a server(host) that processes the command and returns the result to the thin client for display. Coutts is silent about the specific type of results returned from the server that contains image data in bitmap form. Coutts is also silent as to whether the controller can be implemented by a programmable logic chip instead of a processor. Russell also teaches using a thin client computer system to push the processing workload to a remote server. Russell teaches that the execution results are converted into the bitmap image at the host computer and sent to the thin client (¶21). It would

have been obvious to a person of ordinary skill in the art at the time of the invention to modify Coutts with Russell. The reason for this modification would be to apply the well known method of sending images as results to a thin client as taught by Russell. A person of ordinary skill would be motivated to combine Coutts and Russell because this decreases the processing power needed at the network terminal. Russell also teaches that the controller of the network terminal being a programmable logic chip (**Russell calls it a programmable logic controller ¶5**). It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the network terminal and controller of Coutts with a programmable logic chip instead of a standard processor method. The reason for this modification would be because programmable logic arrays(chips), PLAs are well known in the art (**as taught by Russell ¶25**) and provide hardware that is easily reconfigurable to the specific functionality needed by the terminal.

Regarding claim 23 the combination of Coutts, Russell and Buswell has been discussed above, Coutts further teaches an I/O port connectable to a monitor

["ATM 21 has a number of peripheral devices. These are a card reader 23, a receipt printer 24, and a cash dispenser 25. These devices are connected through suitable parallel or serial ports to a central processor 30 provided in ATM 21. ATM 21 also includes a keyboard 22 and a user display 31." (Column 11 Lines 57-62)]

and wherein the execution results include an image and the terminal OS provides the image to the I/O port.

["If the entered PIN number is found to be valid for the particular card that has been inserted into card reader 13 then user interface 12 can be informed accordingly whereupon it may generate a

USER_VALID" event message. This may cause display of a cash selection request." (Column 11 Lines 15-19)]

Regarding claim 26, the combination of Coutts, Russell and Buswell has been discussed above, Coutts further teaches that the terminal OS is stored in and run from volatile memory of the network terminal. **["When the peripheral 364 has received its IP address and its operating system, it can then use the TCP/IP protocol to download its applications software module from the server 334 to the volatile memory 380." (Column 12 Lines 34-37)]** and operates on the network terminal independently of a processor. Regarding the limitation that the terminal operates independently of a processor it is clear that the terminal runs independently from a processor in an user's cell phone.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coutts, Russell and Buswell as applied to claim 24 above, and further in view of Vasilik.

Regarding claim 25, the teachings Coutts and Buswell in reference to claim 24 have been discuss above. They do not teach that the images are bit map images. Vasilik teaches that the images are bitmap images.

["For representing color images, a bitmap requires more than one bit for each pixel. A 16-color bitmap image, such as are commonly employed for VGA displays, would require 4 bits to encode the color of each pixel. A bitmap for a 256-color image requires 8 bits per pixel." Column 5 Lines 52 – 56)]

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the images used in displaying executed results with bitmap images

as taught by Vasilik. The reason for this modification would be to allow the display of images that need a bitmap of 8 or 16 bits to show color as taught by Vasilik

Applicant's Remarks/Arguments

The applicant argues that it would not be obvious to combine the PLC of Russell with Coutts because the PLC described in Russell is located in a separate device than the network terminal. The applicant further argues that because the PLC is separate and in addition to a microprocessor, the application of Russell to Coutts would lead to substantial change in Coutt's rendering such a system inoperable

The examiner finds such arguments not persuasive because the examiner utilizes the Russell reference to teach the use of PLCs. Microprocessor based, PLA(programmable logic array), System On Chip(SOC) and PLCs have been know in the art for many years. Any type of processing configuration from the above list may be used in a device, based on specific needs of the device(space ... efficiency). Whether the combination of Coutts and Russell would lead to substantial change is irrelevant since PLCs, SOC's and their methods for substituting them in place of microprocessors well known.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TOM Y. CHANG whose telephone number is (571)270-5938. The examiner can normally be reached on Monday - Thursday from 9am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia, can be reached on (571) 272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/T. Y. C./
Examiner, Art Unit 2456

/Rupal D. Dharia/
Supervisory Patent Examiner, Art
Unit 2400